

Author Index to Volume 152

Abramson, E., see P. Dupré	152 (1991) 293
Adam, A.G., Y. Azuma, H. Li, A.J. Merer and C. Thambir, Anomalous structure in the $A^6\Sigma^+ - X^6\Sigma^+$ transition of MnO caused by interference between two internal hyperfine perturbations	152 (1991) 391
Adelman, S.A., see F. Patron	152 (1991) 121
Azuma, Y., see A.G. Adam	152 (1991) 391
Barbara, P.F., see W. Jarzeba	152 (1991) 57
Benjamin, I., L.L. Lee, Y.S. Li, A. Liu and K.R. Wilson, Generalized Langevin model for molecular dynamics of an activated reaction in solution	152 (1991) 1
Bley, U., P.B. Davies, M. Grantz, T.J. Sears and F. Temps, FIR LMR spectra of FO_2 : some classic examples of level anticrossing resonances	152 (1991) 281
Burlatsky, S.F., G.S. Oshanin and A.A. Ovchinnikov, Kinetics of chemical short-range ordering in liquids and diffusion-controlled reactions	152 (1991) 13
Burshtein, A.I. and A.A. Zharkov, The probability of non-adiabatic electron transfer as a function of friction	152 (1991) 23
Cameron, I.G., see W.T. Sobol	152 (1991) 337
Charutz, D.M. and R.D. Levine, An exact theory of friction for reactive collisions in a solvent using an interaction representation	152 (1991) 31
Clough, S., A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton, Symmetry breaking in thermally activated NH_4 rotation studied by NMR level crossing spectroscopy	152 (1991) 343
Davies, P.B., see U. Bley	152 (1991) 281
Dupré, P., R. Jost, M. Lombardi, P.G. Green, E. Abramson and R.W. Field, Anomalous behavior of the anticrossing density as a function of excitation energy in the C_2H_2 molecule	152 (1991) 293
Field, R.W., see P. Dupré	152 (1991) 293
Frank, U.E. and W. Hüttner, The diagmagnetic properties of the $\cdot NF_2$ radical by magic doublet rotational Zeeman spectroscopy	152 (1991) 261
Friedman, H.L., see Y. Zhou	152 (1991) 185
Friedman, H.L., see F.O. Raineri	152 (1991) 201
Gehrke, Ch., R. Mohrschladt, J. Schroeder, J. Troe and P. Vöhringer, Photoisomerization dynamics of diphenylbutadiene in compressed liquid alkanes and in solid environment	152 (1991) 45
Glasbeek, M., see E. van Oort	152 (1991) 365
Glenewinkel-Meyer, Th., Ch. Ottinger, P. Rosmus and H.-J. Werner, MRCI potential energy functions for the charge transfer reactions $H^+ + HCl (X^1\Sigma^+) \rightarrow H + HCl^+ (X^2\Pi_b, A^2\Sigma^+)$	152 (1991) 409
Gochev, A., see G.E. McManis	152 (1991) 107

Grantz, M., see U. Bley	152 (1991) 281
Green, P.G., see P. Dupré	152 (1991) 293
Horsewill, A.J., see S. Clough	152 (1991) 343
Hüttner, W., see U.E. Frank	152 (1991) 261
Hynes, J.T., see G. van der Zwan	152 (1991) 169
Jarzeba, W., G.C. Walker, A.E. Johnson and P.F. Barbara, Nonexponential solvation dynamics of simple liquids and mixtures	152 (1991) 57
Johnson, A.E., see W. Jarzeba	152 (1991) 57
Johnson, M.R., see S. Clough	152 (1991) 343
Johr, T., see H. Knöckel	152 (1991) 399
Joly, A.G. and K.A. Nelson, Metal carbonyl photochemistry in organic solvents: femto-second transient absorption and preliminary resonance Raman spectroscopy	152 (1991) 69
Jost, R., see P. Dupré	152 (1991) 293
Kapinus, E.I., Friction effect on the mechanism of photochemical redox processes in solutions	152 (1991) 83
Kivelson, D., see G. Tarjus	152 (1991) 153
Knöckel, H., T. Johr, H. Richter and E. Tiemann, The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the $A^1\Sigma_u^+$ state of Na_2	152 (1991) 399
Kreitzman, S.R., Electron relaxation dynamics of Mu ALCR spectra	152 (1991) 353
Lee, J., see S.-B. Zhu	152 (1991) 221
Lee, L.L., see I. Benjamin	152 (1991) 1
Levine, R.D., see D.M. Charutz	152 (1991) 31
Li, H., see A.G. Adam	152 (1991) 391
Li, Y.S., see I. Benjamin	152 (1991) 1
Liu, A., see I. Benjamin	152 (1991) 1
Lombardi, M., see P. Dupré	152 (1991) 293
MacPhail, R.A. and F.C. Monroe, Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane	152 (1991) 93
McManis, G.E., A. Gochev and M.J. Weaver, Solvent dynamical effects in electron transfer: the solvent inertial limit and the predicted influence of quantum effects	152 (1991) 107
Meerts, W.L. and I. Ozier, Avoided-crossing molecular-beam study of the torsion-rotation energy levels of CH_3CF_3	152 (1991) 241
Merer, A.J., see A.G. Adam	152 (1991) 391
Mohammed, M.A., see S. Clough	152 (1991) 343
Mohrschladt, R., see Ch. Gehrke	152 (1991) 45
Monroe, F.C., see R.A. MacPhail	152 (1991) 93
Nelson, K.A., see A.G. Joly	152 (1991) 69
Newton, T., see S. Clough	152 (1991) 343
Ochi, N. and S. Tsuchiya, Rovibronic level structure of electronically excited acetylene (\tilde{A}^1A_u) in a supersonic jet as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy	152 (1991) 319

Oshanin, G.S., see S.F. Burlatsky	152 (1991) 13
Ottinger, Ch., see Th. Glenewinkel-Meyer	152 (1991) 409
Ovchinnikov, A.A., see S.F. Burlatsky	152 (1991) 13
Ozier, I., see W.L. Meerts	152 (1991) 241
Patron, F. and S.A. Adelman, Solvent cage effects and chemical dynamics in liquids	152 (1991) 121
Pintar, M.M., see W.T. Sobol	152 (1991) 337
Pliva, J., see E. Riedle	152 (1991) 375
Raineri, F.O., Y. Zhou, H.L. Friedman and G. Stell, Ion solvation dynamics in an interaction-site model solvent	152 (1991) 201
Richter, H., see H. Knöckel	152 (1991) 399
Riedle, E. and J. Pliva, Mixing of the vibrational angular momentum components of multiply degenerate vibronic states of benzene by vibrational <i>l</i> -type resonance	152 (1991) 375
Robinson, G.W., see S.-B. Zhu	152 (1991) 221
Rosmus, P., see Th. Glenewinkel-Meyer	152 (1991) 409
Schroeder, J., see Ch. Gehrke	152 (1991) 45
Sears, T.J., see U. Bley	152 (1991) 281
Shushin, A.I., Net CIDNP in geminate radical pair recombination in viscous liquids. Comparison of theory and experiment for high magnetic fields	152 (1991) 133
Simon, J.D. and S.-G. Su, Picosecond Stokes shift studies of solvent friction: experimental measurements of time-dependent band shape and integrated intensity	152 (1991) 143
Singh, S., see S.-B. Zhu	152 (1991) 221
Sobol, W.T., I.G. Cameron and M.M. Pintar, A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH ₃	152 (1991) 337
Someya, K., see K. Tanaka	152 (1991) 229
Stell, G., see Y. Zhou	152 (1991) 185
Stell, G., see F.O. Raineri	152 (1991) 201
Su, S.-G., see J.D. Simon	152 (1991) 143
Tanaka, K., K. Someya and T. Tanaka, Observation of level crossing and level anticrossing signals in the CO ₂ laser Stark spectrum of POF ₃ and their proposed application to electric field standards in laser Stark spectroscopy	152 (1991) 229
Tanaka, T., see K. Tanaka	152 (1991) 229
Tarjus, G. and D. Kivelson, Solvent effect on activated rate processes: on the validity of the GLE approach	152 (1991) 153
Temps, F., see U. Bley	152 (1991) 281
Thambir, C., see A.G. Adam	152 (1991) 391
Tiemann, E., see H. Knöckel	152 (1991) 399
Troe, J., see Ch. Gehrke	152 (1991) 45
Tsuchiya, S., see N. Ochi	152 (1991) 319
Van der Zwan, G. and J.T. Hynes, Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere friction	152 (1991) 169
Van Oort, E. and M. Glasbeek, Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in diamond	152 (1991) 365

Vöhringer, P., see Ch. Gehrke	152 (1991) 45
Walker, G.C., see W. Jarzeba	152 (1991) 57
Weaver, M.J., see G.E. McManis	152 (1991) 107
Werner, H.-J., see Th. Glenewinkel-Meyer	152 (1991) 409
Wilson, K.R., see I. Benjamin	152 (1991) 1
Zharikov, A.A., see A.I. Burshtein	152 (1991) 23
Zhou, Y., H.L. Friedman and G. Stell, Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation	152 (1991) 185
Zhou, Y., see F.O. Raineri	152 (1991) 201
Zhu, S.-B., S. Singh, J. Lee and G.W. Robinson, Velocity dependence of friction	152 (1991) 221

List of Subjects

1 Methods

1.1 Theoretical

- 1.1.1 Group theory and algebras
- 1.1.2 Classical mechanics *
- 1.1.3 Quantized field theory
- 1.1.4 Many body and quasiparticle approaches *
- 1.1.5 Coupling schemes and perturbative treatments *
- 1.1.6 Relativistic quantum mechanics
- 1.1.7 Transport quantum mechanics *
- 1.1.8 Equilibrium statistical mechanics
- 1.1.9 Statistical mechanics of stationary states *
- 1.1.10 Non-equilibrium thermodynamic and hydrodynamic theories *
- 1.1.11 Ab initio schemes for stationary properties *
- 1.1.12 Computational and simulation methods *
- 1.1.13 Molecular dynamics and scattering theory *

1.2 Experimental

- 1.2.1 Magnetic resonances *
- 1.2.2 Cyclotron resonance
- 1.2.3 Microwave spectroscopy *
- 1.2.4 Infrared spectroscopy *
- 1.2.5 Raman spectroscopy *
- 1.2.6 Visible and UV spectroscopy *
- 1.2.7 Fluorescence spectroscopy *
- 1.2.8 Photoelectron and Auger spectroscopy
- 1.2.9 X-ray spectroscopy
- 1.2.10 Electron impact spectroscopy
- 1.2.11 Laser methods *
- 1.2.12 Picosecond spectroscopy *
- 1.2.13 Non-linear optical spectroscopy *
- 1.2.14 Synchrotron spectroscopies
- 1.2.15 Coherent optical spectroscopy *
- 1.2.16 Optical pumping
- 1.2.17 Multiple resonance spectroscopy *
- 1.2.18 Optoacoustic spectroscopy
- 1.2.19 Atomic and molecular beam techniques *
- 1.2.20 Time-resolved experiments *
- 1.2.21 Mass spectrometry
- 1.2.22 Radiolysis
- 1.2.23 Mössbauer spectroscopy
- 1.2.24 X-ray, electron and neutron diffraction
- 1.2.25 Neutron scattering
- 1.2.26 Light scattering
- 1.2.27 Field emission and field ionization
- 1.2.28 Measurement of macroscopic variables

2 Objects

2.1 Bulk systems

- 2.1.1 Gases *
- 2.1.2 Supersonic beams *
- 2.1.3 Liquids neat *
- 2.1.4 Liquid mixtures and solutions *
- 2.1.5 Crystals *
- 2.1.5.1 neat *
- 2.1.5.2 mixed
- 2.1.6 Glasses
- 2.1.7 Liquid crystals
- 2.1.8 Polymers
- 2.1.9 Semiconductors
- 2.1.10 Metals and alloys
- 2.1.11 Thin films
- 2.1.12 Surfaces
- 2.1.13 Low-dimensional materials
- 2.1.14 Dielectrics *
- 2.1.15 Plasmas
- 2.1.16 Biological systems

2.2 Microscopic systems

- 2.2.1 Atoms
- 2.2.2 Molecules (neutral and ionic) *
- 2.2.2.1 diatomic *
- 2.2.2.2 small polyatomics *
- 2.2.2.3 aromatics *
- 2.2.2.4 other large *
- 2.2.2.5 polymeric and biological
- 2.2.3 Molecular aggregates
- 2.2.3.1 dimers
- 2.2.3.2 van der Waals molecules
- 2.2.3.3 clusters
- 2.2.3.4 complexes
- 2.2.4 Free radicals (including hydronium and muonium) *
- 2.2.5 Quasiparticles (including excitons)
- 2.2.6 Defects and impurities *
- 2.2.7 Ions and charge carriers *

* Denotes subjects covered in this volume

3 Phenomena

3.1	Molecular structure *	3.16	Multiphoton phenomena
3.2	Vibrations and rotations of molecules *	3.17	Reactions (including dissociation) *
3.3	Electronic structure and states *	3.17.1	gas phase *
3.4	Electric and magnetic properties *	3.17.2	condensed phase *
3.5	Spin splittings *	3.17.3	photochemical *
3.6	Optical activity	3.18	Tunnelling *
3.7	Molecular interactions *	3.19	Electron transfer *
3.8	Spectral bandshapes and intensities *	3.20	Positron annihilation
3.9	Coupling of electronic and nuclear motion *	3.21	Ionization (including Rydberg states)
3.10	Energy transfer processes	3.22	Molecular motion (including diffusive) *
3.11	Molecular photophysical processes *	3.23	Isotopic effects
3.12	Intramolecular dynamics *	3.24	Fluctuations and noise
3.12.1	radiationless transitions	3.25	Collective motion and excitations *
3.12.2	vibrational energy redistribution (including vibrational dissociation) *	3.26	Surface effects and catalysis
3.13	Luminescence spectra, yields and lifetimes *	3.27	Thermodynamic and transport properties
3.14	Coherence loss processes *	3.28	Structure of solids and liquids
3.15	Non-linear responses (including optical)	3.29	Critical phenomena
		3.30	Phase transitions

Subject Index to Volume 152

Methods

Theoretical

Classical mechanics

An exact theory of friction for reactive collisions in a solvent using an interaction representation, D.M. Charutz and R.D. Levine 152 (1991) 31

Many body and quasiparticle approaches

Symmetry breaking in thermally activated NH₄ rotation studied by NMR level crossing spectroscopy, S. Clough, A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton 152 (1991) 343

Coupling schemes and perturbative treatments

The diagmagnetic properties of the ·NF₂ radical by magic doublet rotational Zeeman spectroscopy, U.E. Frank and W. Hüttner 152 (1991) 261
 Electron relaxation dynamics of Mu ALCR spectra, S.R. Kreitzman 152 (1991) 353

Transport quantum mechanics

Symmetry breaking in thermally activated NH₄ rotation studied by NMR level crossing spectroscopy, S. Clough, A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton 152 (1991) 343

Statistical mechanics of stationary states

Velocity dependence of friction, S.-B. Zhu, S. Singh, J. Lee and G.W. Robinson 152 (1991) 221

Non-equilibrium thermodynamic and hydrodynamic theories

Generalized Langevin model for molecular dynamics of an activated reaction in solution, I. Benjamin, L.L. Lee, Y.S. Li, A. Liu and K.R. Wilson 152 (1991) 1

The probability of non-adiabatic electron transfer as a function of friction, A.I. Burshtein and A.A. Zharikov 152 (1991) 23

Solvent effect on activated rate processes: on the validity of the GLE approach, G. Tarjus and D. Kivelson 152 (1991) 153

Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere friction, G. van der Zwan and J.T. Hynes 152 (1991) 169

Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 185

Ion solvation dynamics in an interaction-site model solvent, F.O. Rainieri, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 201

Ab initio schemes for stationary properties

MRCI potential energy functions for the charge transfer reactions $H^+ + HCl \rightarrow H + HCl^+$ ($X^1\Sigma^+$, $X^2\Pi$, $A^2\Sigma^+$), Th. Glenewinkel-Meyer, Ch. Ottinger, P. Rosmus and H.-J. Werner

152 (1991) 409

Computational and simulation methods

Generalized Langevin model for molecular dynamics of an activated reaction in solution, I. Benjamin, L.L. Lee, Y.S. Li, A. Liu and K.R. Wilson

152 (1991) 1

An exact theory of friction for reactive collisions in a solvent using an interaction representation, D.M. Charatz and R.D. Levine

152 (1991) 31

Solvent cage effects and chemical dynamics in liquids, F. Patron and S.A. Adelman

152 (1991) 121

Molecular dynamics and scattering theory

An exact theory of friction for reactive collisions in a solvent using an interaction representation, D.M. Charatz and R.D. Levine

152 (1991) 31

Solvent dynamical effects in electron transfer: the solvent inertial limit and the predicted influence of quantum effects, G.E. McManis, A. Gochev and M.J. Weaver

152 (1991) 107

Net CIDNP in geminate radical pair recombination in viscous liquids. Comparison of theory and experiment for high magnetic fields, A.I. Shushin

152 (1991) 133

Velocity dependence of friction, S.-B. Zhu, S. Singh, J. Lee and G.W. Robinson

152 (1991) 221

Symmetry breaking in thermally activated NH_4 rotation studied by NMR level crossing spectroscopy, S. Clough, A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton

152 (1991) 343

Experimental*Magnetic resonances*

Net CIDNP in geminate radical pair recombination in viscous liquids. Comparison of theory and experiment for high magnetic fields, A.I. Shushin

152 (1991) 133

FIR LMR spectra of FO_2 : some classic examples of level anticrossing resonances, U. Bley, P.B. Davies, M. Grantz, T.J. Sears and F. Temps

152 (1991) 281

A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH_3 , W.T. Sobol, I.G. Cameron and M.M. Pintar

152 (1991) 337

Symmetry breaking in thermally activated NH_4 rotation studied by NMR level crossing spectroscopy, S. Clough, A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton

152 (1991) 343

Electron relaxation dynamics of Mu ALCR spectra, S.R. Kreitzman

152 (1991) 353

Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in diamond, E. van Oort and M. Glasbeek

152 (1991) 365

Microwave spectroscopy

Observation of level crossing and level anticrossing signals in the CO_2 laser Stark spectrum of POF_3 and their proposed application to electric field standards in laser Stark spectroscopy, K. Tanaka, K. Someya and T. Tanaka

152 (1991) 229

The diamagnetic properties of the $\cdot NF_2$ radical by magic doublet rotational Zeeman spectroscopy, U.E. Frank and W. Hüttner

152 (1991) 261

Infrared spectroscopy

FIR LMR spectra of FO_2 : some classic examples of level anticrossing resonances, U. Bley, P.B. Davies, M. Grantz, T.J. Sears and F. Temps

152 (1991) 281

Raman spectroscopy

Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane,
R.A. MacPhail and F.C. Monroe

152 (1991) 93

Visible and UV spectroscopy

Picosecond Stokes shift studies of solvent friction: experimental measurements of time-dependent band shape and integrated intensity, J.D. Simon and S.-G. Su

152 (1991) 143

Anomalous behavior of the anticrossing density as a function of excitation energy in the C₂H₂ molecule, P. Dupré, R. Jost, M. Lombardi, P.G. Green, E. Abramson and R.W. Field

Rovibronic level structure of electronically excited acetylene ($\tilde{\Lambda}^1A_u$) in a supersonic jet as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy, N. Ochi and S. Tsuchiya

Mixing of the vibrational angular momentum components of multiply degenerate vibronic states of benzene by vibrational *l*-type resonance, E. Riedle and J. Pliva

The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the A¹ Σ_u^+ state of Na₂, H. Knöckel, T. Johr, H. Richter and E. Tiemann

152 (1991) 293

152 (1991) 319

152 (1991) 375

152 (1991) 399

Fluorescence spectroscopy

Photoisomerization dynamics of diphenylbutadiene in compressed liquid alkanes and in solid environment, Ch. Gehrke, R. Mohrschladt, J. Schroeder, J. Troe and P. Vöhringer

Friction effect on the mechanism of photochemical redox processes in solutions, E.I. Kapinus

Picosecond Stokes shift studies of solvent friction: experimental measurements of time-dependent band shape and integrated intensity, J.D. Simon and S.-G. Su

Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in diamond, E. van Oort and M. Glasbeek

152 (1991) 45

152 (1991) 83

152 (1991) 143

152 (1991) 365

Laser methods

Observation of level crossing and level anticrossing signals in the CO₂ laser Stark spectrum of POF₃ and their proposed application to electric field standards in laser Stark spectroscopy, K. Tanaka, K. Someya and T. Tanaka

152 (1991) 229

FIR LMR spectra of FO₂: some classic examples of level anticrossing resonances, U. Bley, P.B. Davies, M. Grantz, T.J. Sears and F. Temps

152 (1991) 281

Anomalous structure in the A⁶ Σ^+ -X⁶ Σ^+ transition of MnO caused by interference between two internal hyperfine perturbations, A.G. Adam, Y. Azuma, H. Li, A.J. Merer and C. Thambir

152 (1991) 391

Picosecond spectroscopy

Photoisomerization dynamics of diphenylbutadiene in compressed liquid alkanes and in solid environment, Ch. Gehrke, R. Mohrschladt, J. Schroeder, J. Troe and P. Vöhringer

152 (1991) 45

Nonexponential solvation dynamics of simple liquids and mixtures, W. Jarzeba, G.C. Walker, A.E. Johnson and P.F. Barbara

152 (1991) 57

Metal carbonyl photochemistry in organic solvents: femtosecond transient absorption and preliminary resonance Raman spectroscopy, A.G. Joly and K.A. Nelson

152 (1991) 69

Non-linear optical spectroscopy

Anomalous structure in the $A^6\Sigma^+ - X^6\Sigma^+$ transition of MnO caused by interference between two internal hyperfine perturbations, A.G. Adam, Y. Azuma, H. Li, A.J. Merer and C. Thambir

152 (1991) 391

Coherent optical spectroscopy

Rovibronic level structure of electronically excited acetylene (\tilde{A}^1A_u) in a supersonic jet as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy, N. Ochi and S. Tsuchiya

152 (1991) 319

Multiple resonance spectroscopy

Observation of level crossing and level anticrossing signals in the CO₂ laser Stark spectrum of POF₃ and their proposed application to electric field standards in laser Stark spectroscopy, K. Tanaka, K. Someya and T. Tanaka

152 (1991) 229

A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH₃, W.T. Sobol, I.G. Cameron and M.M. Pintar

152 (1991) 337

Atomic and molecular beam techniques

Avoided-crossing molecular-beam study of the torsion-rotation energy levels of CH₃CF₃, W.L. Meerts and I. Ozier

152 (1991) 241

The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the $A^1\Sigma_u^+$ state of Na₂, H. Knöckel, T. Johr, H. Richter and E. Tiemann

152 (1991) 399

Time-resolved experiments

Metal carbonyl photochemistry in organic solvents: femtosecond transient absorption and preliminary resonance Raman spectroscopy, A.G. Joly and K.A. Nelson

152 (1991) 69

Friction effect on the mechanism of photochemical redox processes in solutions, E.I. Kapinus

152 (1991) 83

Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in diamond, E. van Oort and M. Glasbeek

152 (1991) 365

Objects**Bulk systems***Gases*

The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the $A^1\Sigma_u^+$ state of Na₂, H. Knöckel, T. Johr, H. Richter and E. Tiemann

152 (1991) 399

Supersonic beams

Rovibronic level structure of electronically excited acetylene (\tilde{A}^1A_u) in a supersonic jet as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy, N. Ochi and S. Tsuchiya

152 (1991) 319

Liquids neat

Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane, R.A. MacPhail and F.C. Monroe

152 (1991) 93

Ion solvation dynamics in an interaction-site model solvent, F.O. Rainieri, Y. Zhou, H.L. Friedman and G. Stell

152 (1991) 201

Liquid mixtures and solutions

An exact theory of friction for reactive collisions in a solvent using an interaction representation, D.M. Charutz and R.D. Levine 152 (1991) 31

Nonexponential solvation dynamics of simple liquids and mixtures, W. Jarzeba, G.C. Walker, A.E. Johnson and P.F. Barbara 152 (1991) 57

Metal carbonyl photochemistry in organic solvents: femtosecond transient absorption and preliminary resonance Raman spectroscopy, A.G. Joly and K.A. Nelson 152 (1991) 69

Friction effect on the mechanism of photochemical redox processes in solutions, E.I. Kapinus 152 (1991) 83

Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane, R.A. MacPhail and F.C. Monroe 152 (1991) 93

Solvent cage effects and chemical dynamics in liquids, F. Patron and S.A. Adelman 152 (1991) 121

Solvent effect on activated rate processes: on the validity of the GLE approach, G. Tarjus and D. Kivelson 152 (1991) 153

Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere friction, G. van der Zwan and J.T. Hynes 152 (1991) 169

Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 185

Velocity dependence of friction, S.-B. Zhu, S. Singh, J. Lee and G.W. Robinson 152 (1991) 221

Crystals

A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH₃, W.T. Sobol, I.G. Cameron and M.M. Pintar 152 (1991) 337

-neat

A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH₃, W.T. Sobol, I.G. Cameron and M.M. Pintar 152 (1991) 337

Dielectrics

Ion solvation dynamics in an interaction-site model solvent, F.O. Raineri, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 201

*Microscopic systems**Molecules (neutral and ionic)*

Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 185

Observation of level crossing and level anticrossing signals in the CO₂ laser Stark spectrum of POF₃ and their proposed application to electric field standards in laser Stark spectroscopy, K. Tanaka, K. Someya and T. Tanaka 152 (1991) 229

-diatomic

Anomalous structure in the A^{6Σ⁺}-X^{6Σ⁺} transition of MnO caused by interference between two internal hyperfine perturbations, A.G. Adam, Y. Azuma, H. Li, A.J. Merer and C. Thambir 152 (1991) 391

The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the A^{1Σ⁺} state of Na₂, H. Knöckel, T. Johr, H. Richter and E. Tiemann 152 (1991) 399

-small polyatomics

Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane,
R.A. MacPhail and F.C. Monroe 152 (1991) 93

Avoided-crossing molecular-beam study of the torsion-rotation energy levels of CH_3CF_3 ,
W.L. Meerts and I. Ozier 152 (1991) 241

FIR LMR spectra of FO_2 : some classic examples of level anticrossing resonances, U. Bley,
P.B. Davies, M. Grantz, T.J. Sears and F. Temps 152 (1991) 281

Anomalous behavior of the anticrossing density as a function of excitation energy in the
 C_2H_2 molecule, P. Dupré, R. Jost, M. Lombardi, P.G. Green, E. Abramson and
R.W. Field 152 (1991) 293

Rovibronic level structure of electronically excited acetylene ($\tilde{\Lambda}^1\text{A}_u$) in a supersonic jet
as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy,
N. Ochi and S. Tsuchiya 152 (1991) 319

MRCI potential energy functions for the charge transfer reactions $\text{H}^+ + \text{HCl}$
($\text{X}^1\Sigma^+$) → $\text{H} + \text{HCl}^+$ ($\text{X}^2\Pi_b$, $\text{A}^2\Sigma^+$), Th. Glenewinkel-Meyer, Ch. Ottinger, P. Rosmus
and H.-J. Werner 152 (1991) 409

-aromatics

Friction effect on the mechanism of photochemical redox processes in solutions,
E.I. Kapinus 152 (1991) 83

Mixing of the vibrational angular momentum components of multiply degenerate vibronic
states of benzene by vibrational *J*-type resonance, E. Riedle and J. Pliva 152 (1991) 375

-other large

Picosecond Stokes shift studies of solvent friction: experimental measurements of time-
dependent band shape and integrated intensity, J.D. Simon and S.-G. Su 152 (1991) 143

Free radicals (including hydronium and muonium)

The diamagnetic properties of the ·NF₂ radical by magic doublet rotational Zeeman spec-
troscopy, U.E. Frank and W. Hüttner 152 (1991) 261

Electron relaxation dynamics of Mu ALCR spectra, S.R. Kreitzman 152 (1991) 353

Defects and impurities

Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in
diamond, E. van Oort and M. Glasbeek 152 (1991) 365

Ions and charge carriers

The probability of non-adiabatic electron transfer as a function of friction, A.I. Burshtein
and A.A. Zharikov 152 (1991) 23

Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere
friction, G. van der Zwan and J.T. Hynes 152 (1991) 169

Phenomena*Molecular structure*

Avoided-crossing molecular-beam study of the torsion-rotation energy levels of CH_3CF_3 ,
W.L. Meerts and I. Ozier 152 (1991) 241

Vibrations and rotations of molecules

Solvent cage effects and chemical dynamics in liquids, F. Patron and S.A. Adelman 152 (1991) 121
 The diagmagnetic properties of the ·NF₂ radical by magic doublet rotational Zeeman spectroscopy, U.E. Frank and W. Hüttner 152 (1991) 261
 FIR LMR spectra of FO₂: some classic examples of level anticrossing resonances, U. Bley, P.B. Davies, M. Grantz, T.J. Sears and F. Temps 152 (1991) 281
 Mixing of the vibrational angular momentum components of multiply degenerate vibronic states of benzene by vibrational *l*-type resonance, E. Riedle and J. Pliva 152 (1991) 375
 The influence of the spin-orbit and the hyperfine interaction on the asymptotic behaviour of the A'1Σ_u⁺ state of Na₂, H. Knöckel, T. Johr, H. Richter and E. Tiemann 152 (1991) 399

Electronic structure and states

Picosecond Stokes shift studies of solvent friction: experimental measurements of time-dependent band shape and integrated intensity, J.D. Simon and S.-G. Su 152 (1991) 143
 Observation of level crossing and level anticrossing signals in the CO₂ laser Stark spectrum of POF₃ and their proposed application to electric field standards in laser Stark spectroscopy, K. Tanaka, K. Someya and T. Tanaka 152 (1991) 229

Electric and magnetic properties

The diagmagnetic properties of the ·NF₂ radical by magic doublet rotational Zeeman spectroscopy, U.E. Frank and W. Hüttner 152 (1991) 261
 Anomalous structure in the A'6Σ⁺-X'6Σ⁺ transition of MnO caused by interference between two internal hyperfine perturbations, A.G. Adam, Y. Azuma, H. Li, A.J. Merer and C. Thambir 152 (1991) 391

Spin splittings

Anomalous structure in the A'6Σ⁺-X'6Σ⁺ transition of MnO caused by interference between two internal hyperfine perturbations, A.G. Adam, Y. Azuma, H. Li, A.J. Merer and C. Thambir 152 (1991) 391

Molecular interactions

Nonexponential solvation dynamics of simple liquids and mixtures, W. Jarzeba, G.C. Walker, A.E. Johnson and P.F. Barbara 152 (1991) 57

Spectral bandshapes and intensities

Frequency-dependent solvent friction and torsional damping in liquid 1,2-difluoroethane, R.A. MacPhail and F.C. Monroe 152 (1991) 93

Coupling of electronic and nuclear motion

Picosecond Stokes shift studies of solvent friction: experimental measurements of time-dependent band shape and integrated intensity, J.D. Simon and S.-G. Su 152 (1991) 143

Molecular photophysical processes

Rovibronic level structure of electronically excited acetylene ($\tilde{\Lambda}^1A_u$) in a supersonic jet as studied by laser-induced fluorescence and Zeeman quantum beat spectroscopy, N. Ochi and S. Tsuchiya 152 (1991) 319

Intramolecular dynamics

Anomalous behavior of the anticrossing density as a function of excitation energy in the C₂H₂ molecule, P. Dupré, R. Jost, M. Lombardi, P.G. Green, E. Abramson and R.W. Field

152 (1991) 293

-vibrational energy redistribution (including vibrational dissociation)

Mixing of the vibrational angular momentum components of multiply degenerate vibronic states of benzene by vibrational *l*-type resonance, E. Riedle and J. Pliva

152 (1991) 375

Luminescence spectra, yields and lifetimes

Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere friction, G. van der Zwan and J.T. Hynes

152 (1991) 169

Coherence loss processes

Fluorescence detected level-anticrossing and spin coherence of a localized triplet state in diamond, E. van Oort and M. Glasbeek

152 (1991) 365

Reactions (including dissociation)

Solvent effect on activated rate processes: on the validity of the GLE approach, G. Tarjus and D. Kivelson

152 (1991) 153

-gas phase

Generalized Langevin model for molecular dynamics of an activated reaction in solution, I. Benjamin, L.L. Lee, Y.S. Li, A. Liu and K.R. Wilson

152 (1991) 1

-condensed phase

Generalized Langevin model for molecular dynamics of an activated reaction in solution, I. Benjamin, L.L. Lee, Y.S. Li, A. Liu and K.R. Wilson

152 (1991) 1

An exact theory of friction for reactive collisions in a solvent using an interaction representation, D.M. Charutz and R.D. Levine

152 (1991) 31

Metal carbonyl photochemistry in organic solvents: femtosecond transient absorption and preliminary resonance Raman spectroscopy, A.G. Joly and K.A. Nelson

152 (1991) 69

Solvent cage effects and chemical dynamics in liquids, F. Patron and S.A. Adelman

152 (1991) 121

Solvent effect on activated rate processes: on the validity of the GLE approach, G. Tarjus and D. Kivelson

152 (1991) 153

Chemical reaction rates and solvation dynamics in electrolyte solutions: ion atmosphere friction, G. van der Zwan and J.T. Hynes

152 (1991) 169

Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation, Y. Zhou, H.L. Friedman and G. Stell

152 (1991) 185

Velocity dependence of friction, S.-B. Zhu, S. Singh, J. Lee and G.W. Robinson

152 (1991) 221

-photochemical

Photoisomerization dynamics of diphenylbutadiene in compressed liquid alkanes and in solid environment, Ch. Gehrke, R. Mohrschladt, J. Schroeder, J. Troe and P. Vöhringer

152 (1991) 45

Metal carbonyl photochemistry in organic solvents: femtosecond transient absorption and preliminary resonance Raman spectroscopy, A.G. Joly and K.A. Nelson

152 (1991) 69

Tunnelling

Solvent dynamical effects in electron transfer: the solvent inertial limit and the predicted influence of quantum effects, G.E. McManis, A. Gochev and M.J. Weaver 152 (1991) 107

A Zeeman level crossing study of the symmetry of the potential hindering the torsional oscillator CH₃, W.T. Sobol, I.G. Cameron and M.M. Pintar 152 (1991) 337

Symmetry breaking in thermally activated NH₄ rotation studied by NMR level crossing spectroscopy, S. Clough, A.J. Horsewill, M.R. Johnson, M.A. Mohammed and T. Newton 152 (1991) 343

Electron transfer

The probability of non-adiabatic electron transfer as a function of friction, A.I. Burshtein and A.A. Zharikov 152 (1991) 23

Friction effect on the mechanism of photochemical redox processes in solutions, E.I. Kapinus 152 (1991) 83

Solvent dynamical effects in electron transfer: the solvent inertial limit and the predicted influence of quantum effects, G.E. McManis, A. Gochev and M.J. Weaver 152 (1991) 107

Outer-sphere electron-transfer reactions in model molecular solvents: the mean spherical approximation, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 185

MRCI potential energy functions for the charge transfer reactions H⁺+HCl (X^{1Σ⁺})→H+HCl⁺ (X^{2Π_b}, A^{2Σ⁺}), Th. Glenewinkel-Meyer, Ch. Ottinger, P. Rosmus and H.-J. Werner 152 (1991) 409

Molecular motion (including diffusive)

Photoisomerization dynamics of diphenylbutadiene in compressed liquid alkanes and in solid environment, Ch. Gehrke, R. Mohrschladt, J. Schroeder, J. Troe and P. Vöhringer 152 (1991) 45

Nonexponential solvation dynamics of simple liquids and mixtures, W. Jarzeba, G.C. Walker, A.E. Johnson and P.F. Barbara 152 (1991) 57

Solvent cage effects and chemical dynamics in liquids, F. Patron and S.A. Adelman 152 (1991) 121

Ion solvation dynamics in an interaction-site model solvent, F.O. Rainieri, Y. Zhou, H.L. Friedman and G. Stell 152 (1991) 201

Velocity dependence of friction, S.-B. Zhu, S. Singh, J. Lee and G.W. Robinson 152 (1991) 221

Collective motion and excitations

Nonexponential solvation dynamics of simple liquids and mixtures, W. Jarzeba, G.C. Walker, A.E. Johnson and P.F. Barbara 152 (1991) 57

